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Notice of Allowability

Application No.

10/661,582

Examiner

Tod T. Van Roy

Applicant(s)

JEWELL, JACK L.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an amendment after non-final office action.
2. ☒ The allowed claim(s) is/are 58 and 60-70.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Amendment

The examiner acknowledges the amending of claims 58, 60, and 61-65, cancellation of claims 57 and 59, as well as the addition of claims 66-70.

Allowable Subject Matter

Claims 58, and 60-70 are allowed.

The following is an examiner's statement of reasons for allowance:

As stated in the previous office action:

Claims 60 and 63 are believed to be allowable based on the fact that the prior art did not teach the pit regions to be used to oxidize the correct layers as limited by claim 57. Claim 57 requires the oxidizable layers to be found above the active region. Evans teaches the pit to be used to oxidize the lower DBR layers, and not the top oxidizable layer that meets the claim language. The prior art did teach oxidation of semiconductor layers for current confinement, much like those taught in the Choquette reference, but were not found to teach the method of first forming a pit, then using the pit as an access point to form the oxide in the specified location.

Further, the examiner believes that although Evans et al., teaches a pit for oxidizing lower layers (i.e., below the active region), it would be non-obvious to use the same pit technique to oxidize upper layers. No clear benefit is pointed out by Evans in regards to using a pit to access the layers to perform the oxidation (only benefits of using the oxide itself), consequently, there appears to be no obvious motivating factors for using the same technique to oxidize upper semiconductor layers differently from that

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already practiced in the art at the time of the invention (i.e., complete removal of sidewalls and subsequent oxidation – not forming a pit/basin, or a growth/oxidation/etching technique to form the desired oxide pattern).

Claim 68 is allowable as it contains largely the same limitations found in allowable claim 63.

Claims 58, 61-62, 64-67, and 69-70 are allowable as they depend from allowable claims 60, 63, or 68.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5351257, Lebby et al., teaches a similar structure to that claimed in the instant invention (fig.6), but does not disclose a semiconductor layer to be formed on top of the oxidized layer as is claimed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR



MINSUN CH HARVEY
PRIMARY EXAMINER